IN THE CLAIMS

1.   (Previously presented) A method of detecting defective markings on a semiconductor product, said method comprising:

inputting a reference sequential character set corresponding to a sequential character string on a semiconductor product to be tested;

extracting one or more image features of each actual character marking from a sequential character string on the semiconductor product;

using an optical character recognition technique to recognize a character in each actual character marking as a character selected from a plurality of predefined characters;

producing sequential character data that corresponds to the sequential character string on the semiconductor product;

if at least one of the characters is not recognized, determining the actual character markings to be defective; and

if all of the characters are recognized, comparing the sequential character data to the reference sequential character set;

if there is not a substantially exact match, determining the actual character markings to be defective; and

if there is a substantially exact match, determining the actual character markings to be good.

2.   (Cancelled)

3.   (Previously presented) A method according to claim 1, wherein inputting a reference sequential character set comprises directly inputting the reference sequential character set.

4.   (Previously presented) A method according to claim 3, wherein directly inputting the reference sequential character set comprises using a keyboard to directly input characters corresponding to the reference sequential character set.

5.   (Previously presented) A method according to claim 1, wherein inputting the reference sequential character set comprises scanning a bar code, said bar code having information, including the reference sequential character set, embedded therein.

6.   (Previously presented) A method according to claim 1, wherein the reference sequential character set is recorded on a lot card.

7.   (Previously presented) A method according to claim 1, further comprising reading actual character markings of the product using a Charge-Coupled Device (CCD) camera or a scanner to obtain an image of the character markings.

8.   (Cancelled)

9.   (Previously presented) A method of detecting defective character markings on a semiconductor product following assembly thereof, said method comprising:

inputting and storing a reference sequential character set corresponding to a sequential character string on the semiconductor product;

testing external terminals of said semiconductor product;

reading actual sequential marking characters on the product as a character image;

using an optical character recognition technique to recognize sequential characters in the character image as characters selected from a plurality of predefined characters to produce sequential character data that corresponds to the sequential character string on the semiconductor product;

if at least one of the characters is not recognized, determining the actual sequential character markings to be defective;

if all of the characters are recognized, comparing the sequential character data to the characters in said reference sequential character set;

if there is not a substantially exact match, determining the actual sequential character markings to be defective;

if there is a substantially exact match, determining the actual sequential character markings to be good; and

selectively unloading good products and defective products based on the determined result.

10.   (Cancelled)

11.   (Original) A method according to claim 9, wherein the semiconductor products are provided to a testing unit in a lot.

12.   (Previously presented) A method according to claim 9, wherein the reference sequential character set is recorded on a lot card.

13.   (Previously presented) A method according to claim 12, wherein the reference sequential character set from the lot card is directly input using a keyboard.

14.   (Previously presented) A method according to claim 12, wherein the reference sequential character set is recorded in a bar code and wherein the reference sequential character set is input by scanning the bar code.

15.   (Previously presented) A method of detecting defective markings on a semiconductor product that has already been assembled and subjected to a visual test, said method comprising:

inputting a reference sequential character set that represents proper sequential character markings of the semiconductor product;

storing the reference sequential character set in memory;

providing the semiconductor product to a testing unit in a loading tray;

transferring the product onto a carrier tape;

reading actual sequential character markings of the product as a sequential character image;

converting the sequential character image into sequential character data by recognizing the sequential character image as a set of sequential characters using an Optical Character Recognition (OCR) technique;

if there is a failure to recognize at least a portion of the sequential character image, determining the actual sequential character markings to be defective;

if all of the sequential character image is recognized, comparing the sequential character data to said reference sequential character set to detect defective product markings;

if there is not a substantially exact match, determining the actual sequential character markings to be defective;

if there is a substantially exact match, determining the actual sequential character markings to be good; and

unloading products with defective markings onto an unloading tray.

Docket No. 9903-041   Page 4 of 8   Application No. 10/027,639

16.   (Previously presented) A method according to claim 15, wherein the reference sequential character set is inputted by scanning a bar code on a lot card.

17.   (Previously presented) A method according to claim 15, wherein the reference sequential character set is input using a keyboard.

18.   (Previously presented) An apparatus for detecting defective markings on a semiconductor product, said apparatus comprising:

an input unit for inputting a reference sequential character set corresponding to a sequential character string on a semiconductor product to be tested;

a memory unit configured to store the reference sequential character set;

a readout system configured to read actual markings of the product to be tested as a character image;

an Optical Character Recognition (OCR) unit configured to recognize the character image as an actual sequential character set;

an arithmetic unit configured to compare the actual sequential character set to the reference sequential character set; and

an unloading unit for receiving product having at least one actual sequential character marking that the OCR unit failed to recognize and product having an actual sequential character set that does not substantially exactly match the reference sequential character set; and

an unloading unit for receiving product having actual sequential character markings that substantially exactly matched the reference sequential character set.

19.   (Previously presented) An apparatus according to claim 18, wherein the input unit comprises a keyboard configured to permit a user to directly input the reference sequential character set into the apparatus.

20.   (Previously presented) An apparatus according to claim 18, wherein the input unit comprises a scanner configured to input the reference sequential character set by scanning a bar code.

21.   (Original) An apparatus according to claim 18, wherein the readout system comprises a Charge-Coupled Device (CCD) camera or a scanner.

Docket No. 9903-041   Page 5 of 8   Application No. 10/027,639

22.   (Cancelled)

23.   (Original) An apparatus according to claim 18, further comprising an external terminal testing unit configured to test external terminals of the semiconductor product.

24.   (Original) An apparatus according to claim 18, further comprising a loading tray and a carrier tape, wherein the apparatus is configured to transfer the product to be tested from the loading tray to the carrier tape before the character image is obtained by the readout system.

25.   (Currently amended) A method of detecting defective markings on a semiconductor product, said method comprising:

extracting one or more sequential image features of actual sequential character markings from the semiconductor product;

using an optical character recognition technique for recognizing each character in the actual sequential character markings as a corresponding sequential character selected from a plurality of predefined characters using one or more of the extracted image features;

comparing the recognized sequential characters to the characters in a reference sequential character set;

if at least one of the characters is not recognized, determining the actual sequential character markings to be defective;

if there is not a substantially exact match, determining the actual sequential character markings to be defective; and

if there is a substantially exact match, determining the actual sequential character markings to be good.

26.   (Previously presented) A method according to claim 25, further comprising classifying the product as defective if one or more of the characters in the actual sequential character markings cannot be recognized as a character.

27.   (Previously presented) A method according to claim 9 wherein testing the external terminals of the semiconductor product is performed at substantially the same time as reading actual sequential marking characters on the product as a character image.

Docket No. 9903-041   Page 6 of 8   Application No. 10/027,639